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ARIZONA CORPORATION COMMISSION

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AZ CORP COMMISSION
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December 22, 2015

RE: COMMISSION'S INVESTIGATION OF VALUE AND COST OF DISTRIBUTED GENERATION
Docket No.: E-00000J-14-0023

Dear Commissioners and Interested Parties:

At the October 20, 2015 Open Meeting of the Arizona Corporation Commission, we voted to hold an evidentiary hearing to discuss the Value and Costs of Solar. In addition, we decided to use the current generic docket E-0000J-14-0023 as the repository for the information resulting from that discussion. I feel it is important to provide my thoughts on how this hearing can produce the most value for the Commission and the Interested Parties.

First, I would like to emphasize my view of what the purpose of this hearing is and what it is not. I am addressing this issue due to the apparent confusion based on what I have read in the filings to the docket by several parties.

Accordingly, I envision the following outcomes resulting from this proceeding:

1. Development of a methodology that would inform future proceedings as to how the value and cost of solar should be evaluated and determined as part of a rate case. Since the specifics of each rate case are different and can vary widely for each utility and service area, the methodology would not assign specific values, but rather provide guidance as to how values would be determined in the context of an individual rate case.

2. The methodology would be applied in the individual rate cases rigorously, but not rigidly. Some flexibility is required since all aspects of the methodology may not apply to a given utility, e.g., co-ops often have different issues and considerations than those of investor-owned utilities.

3. The methodology would develop different variables for various cost and value components and valuing concepts based on our current understanding of how those factors relate to costs to provide service to DG customers.

4. The methodology should include consideration of the seven "*Core Cost and Benefit Categories*" *(personal communication, 2015)* as defined by Timothy James from the L. William Seidman Research Institute at the W. P. Carey School of Business at ASU, specifically:
    a. Utility Distributed Solar Costs including incentive program, systems integration costs and utility revenue losses;
    b. Energy Generation Savings;
    c. Generation Capacity Savings;
    d. Transmission Capacity Savings;

e. Distribution Capacity Savings;
f. Environmental Benefits; and
g. Economic Development Benefits.

5. The methodology ideally would also focus on variations of cost and value based on locational and production benefits associated with particular DG installations, e.g. time of use correlated monthly average production data and consideration of grid readiness for significant DG penetration levels.

6. The methodology should evaluate DG installations using a levelized cost of electricity calculation, calculated over the useful life of the system, which is consistent with the way other generation technology costs are compared.

Next, there has been broad disagreement between the parties about the proposed participation and noticing requirements associated with this docket. When I was originally thinking about this hearing, there were several considerations that were paramount in the way I believe we should approach the process:

1. The hearing itself should be a full evidentiary proceeding to ensure due process is provided for all participating parties;

2. The information presented in this hearing should be sworn testimony, subject to cross-examination and rebuttal to allow a finding of facts;

3. Any recommended order should focus on methods and process and should not be assigning costs or values to be used in future ratemaking proceedings;

4. That the hearing should be thought of more in the context of a precursor to 'rulemaking' instead of 'ratemaking' and should not be thought of as having any direct impact on rates for any participating utility;

5. That broad participation should be encouraged but not compelled and all interested parties, whether participating or not, could be informed by the proceeding; and

6. That the proceeding should be handled as expeditiously as possible, so the methodology and findings of fact can be useful in the several pending electricity rate cases before the Commission.

Finally, in addition to the methodology itself, I have provided a list of issues/questions I believe should be addressed by the parties participating in the upcoming hearing. This list of questions is not meant to be comprehensive and is not meant to preclude parties from raising questions and issues that are not addressed herein. The parties are free to address any issues they believe are important and relevant. However, I do ask the parties to address the questions I have listed here, giving the Commission input for consideration.

1. How was the value and cost of solar considered in the development of the current net metering tariffs?

2. Over the past several years the cost of PV panels has declined significantly. Does the declining cost of panels affect the value proposition? If so, how?

3. Is it appropriate to factor the cost of the panels into the reimbursement rate for net metering? If so, how?

4. Does the cost and value of DG solar vary based on the specific customer location? Should this variability be reflected in rates?

5. How does the cost and value of DG solar vary based on the orientation of the panels? How would the installation of single or dual access trackers change the output or efficiency of the DG solar system? Should this variability be reflected in rates?

6. How is the value and cost of DG solar affected when coupled with some type of storage? Should deployment of storage technologies be encouraged? If so, how?

7. How does the value and cost of DG solar compare to the value and cost of community scale and utility scale solar? How do the value and costs of DG solar compare to that of wind or other renewable resources? How does the value and cost of DG solar compare to that of energy efficiency?

8. How does the intermittent nature of DG solar affect its value and costs? Are there technologies that could reduce the intermittency of DG solar? Should those additional costs result in changes to the value and cost of DG solar? Should an "intermittency factor" be applied to more accurately determine cost and value?

9. To what degree is DG solar energy production coincident with peak demand? Does the cost and value of DG solar vary depending on whether or not energy production is coincident with peak demand? Are there policies that the Commission could consider that address this issue?

10. Is it possible for DG solar to be more dispatchable? How does the ability to dispatch or the lack of ability to dispatch affect the value and cost of DG solar?

11. Will the bi-directional energy flow associated with DG solar require modifications or upgrades to the distribution system? How should the cost of these upgrades be considered when determining the cost and value of DG solar? Would the required upgrades vary based on location and penetration of DG solar? Should the costs for DG installations vary based on these factors?

12. How much should secondary economic impacts of DG solar deployment be considered in the value and cost considerations? Do investments in other types of generation technology have similar, greater or lesser secondary economic impacts? If so, how?

Other impacts to consider include:

a. Job impacts associated with DG solar installations;
b. Job impacts associated with closure of fossil fuel plants (and mines) displaced by DG solar;
c. Distribution of DG solar economic benefits between DG installers, customers who install DG solar, PV panel manufacturers and others;
d. Impact of DG solar deployment on overall energy costs and those costs' impacts on economic activity;
e. Effect of DG solar deployment on natural gas and coal prices; and

f. Opportunity costs associated with incenting DG solar, e.g., funds spent on DG solar cannot be spent on other renewable energy resources or energy efficiency.

13. How does the value and cost of DG solar change as penetration levels rise? How should this be considered in rate making and resource planning contexts?

14. Should the fuel cost savings to the utility associated with DG solar be considered in the value and cost determination? If so, how do we deal with the uncertainty of future fuel prices?

15. Does the deployment of DG solar result in changes in the need for transmission capacity? If so, how should those changes be included in the value and cost considerations?

16. Does the deployment of DG solar result in changes in the need for distribution capacity? If so, how should those changes be included in the value and cost considerations?

17. Does the grid itself add value to DG solar? If so, how should the value of the grid be considered when assessing the value and cost of DG solar?

18. Does the deployment of DG solar result in a reduction in the use of water in electric generation? How should this be considered when determining DG solar value?

19. Are there disaster recovery or backup benefits associated with the deployment of DG solar? Are they reliable and quantifiable enough to determine tangible benefits that might accrue to the grid?

20. What, if any, costs are associated with the utility providing voltage support and/or frequency support or other ancillary services in support of DG solar installations?

Sincerely,

Doug Little
Commissioner
Arizona Corporation Commission

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